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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,937	07/29/2003	Dong-Kuk Kim	4591-321	9040

7590 12/10/2004

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1030 SW Morrison Street  
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EXAMINER
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GRAY, LINDA LAMEY

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/629,937	<b>Applicant(s)</b> KIM ET AL.	
	<b>Examiner</b> Linda L Gray	<b>Art Unit</b> 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date **** | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

**Claim Rejections - 35 USC § 112**

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

**Claim 1**, "the electrode pads" (L 16) lack antecedent basis in that the electrodes have not been previously recited as being in pad form. Also, see **claim 12**, line 5. *leg*

**Claim 17**, "the substrate conveyor unit" (L 2) lacks antecedent basis.

**Specification**

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because of "means" (L 1). Correction is required. See MPEP § 608.01(b).

**Claim Rejections - 35 USC § 103**

**5.** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**6.** Applicant has provided evidence in this file showing that the invention was owned by, or subject to an obligation of assignment to, the same entity as Kim et al. (US 2004/0108582 A1) at the time this invention was made. Accordingly, Kim et al. is disqualified as prior art through 35 U.S.C. 102(e), (f) or (g) in any rejection under 35 U.S.C. 103(a) in this application.

However, this applied art additionally qualifies as prior art under another subsection of 35 U.S.C. 102 and accordingly is not disqualified as prior art under 35 U.S.C. 103(a). Applicant may overcome the applied art either by a showing under 37 CFR 1.132 that the invention disclosed therein was derived from the inventor of this application, and is therefore, not the invention "by another", or by antedating the applied art under 37 CFR 1.131.

**7. Claims 12-13 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. in view of Nam et al. (US 6,742,561).**

**Claim 12**, Kim et al. teach an apparatus for bonding chip 13 including means 101/301/81-323-5 for providing substrate 51b including first chip 11, tape providing unit 555 for providing adhesive tape, tape attaching device 551 for attaching the tape to a top area of chip 11, and chip attaching device 571 for attaching chip 13 to the tape.

*Kim et al. do not teach using insulating tape specifically or electrodes at the ends of chip 11 to electrically connect chip 11 to substrate 51b.*

However, it is conventional in the art of making a multi-chip package to use insulating adhesive tape to provide good electrical insulation between the chips (see Nam et al.), and for this reason it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided for such in Kim et al.

**Art Unit: 1734**

Also, Kim et al. teach in the prior art (Fig 1) electrodes 12 on the edges of substrate 11 with adhesive attaching means 28 therebetween.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Kim et al. electrodes at the ends of chip 11 to electrically connect chip 11 to substrate 51b because Kim et al. itself teaches such to be conventional in the same art.

**Claim 13**, Kim et al. teach device 551 to include a reel on which the tape is wound, tape cutter 557 for cutting the tape, rollers for feeding the tape from the reel to cutter 557, and tape adsorption device 571 for adsorbing the tape to support the tape (Fig 6).

*Kim et al. do not teach a tape holding device for engaging with device 571.*

However, Nam et al. teach tape holding device 50 for engaging with device 52 to hold the tape in position for cutting, and for this reason it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Kim et al. a tape holding device for engaging with device 571.

**Claim 17**, Kim et al. teach wafer table 561 providing wafer 5 including chip 13.  
**Claim 18**, device 571 is located between table 561 and substrate conveyor unit 311/511.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### **Allowable Subject Matter**

**8. Claims 1-11 would be allowable if rewritten or amended to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.**

**Claims 14-16 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.**

**Art Unit: 1734**

**9.** The following is a statement of reasons for the indication of allowable subject matter:

**claims 1 and 12:** Nam et al. do not teach that the tape attaching device attaches the insulating adhesive tape to an area between electrodes of the first chip in that the tape is attached next to the chip in a separate location from the chip on the lead frame to bond the second chip thereto and provide good electrical insulation between the first and second chips.

**claims 1 and 14:** Kim et al. do not teach that substrate cassette 75, which include substrate 51b, also include chips 11 already mounted thereon with substrate 51b being electrically connected to electrodes of chip 11, in that cassette 75 includes only substrates 51b where chips 11 are added thereafter at station 301, and although Nam et al. teach providing a substrate cassette containing a plurality of substrates including a first chip already thereon and Kim et al.s prior art teach electrodes on the edges of substrate 11 with adhesive attaching means 28 therebetween, it would not have been obvious to a person of ordinary skill in the art at the time the invention was made to gathered the combined items 51a/51b/11 leaving curer 401 and then loaded such into a substrate cassette for feeding to the next step of adding chip 13 thereto because Kim et al. express the need and improvement of the continuous process disclosed in the versus prior art batch processes (p 1, para 0012) and making the process of Kim et al. a batch process would change the purpose of the Kim et al. reference itself.

**10.** As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

**Conclusion**

**11.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Gray whose telephone number is (571) 272-1228. The examiner can normally be reached Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla, can be reached at (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

**Art Unit: 1734**

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

llg

December 8, 2004

*Linda L. Gray*  
LINDA GRAY  
PRIMARY EXAMINER